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The role of puberty in the making and breaking of young ballet dancers:

Perspectives of dance teachers

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Abstract

Physical changes associated with puberty may conflict with functional and aesthetic ideals for a career in ballet. The dance teacher is in a position to guide young dancers through the pubertal transition, although dancers rather than teachers are often the focus of research. This study explores the social stimulus value of the female body in ballet as perceived by the dance teacher and how stimulus value may change during puberty. Ten UK dance teachers were interviewed; interpretative phenomenological analysis was used. Four main themes perceived by dance teachers emerged as central to the social stimulus value of the body among adolescent dancers: *the ideal body*; *teacher approaches to managing puberty in the dance environment*; *puberty as a 'make or break' factor in dance*; and *teacher awareness of pubertal onset and the implications of timing*. Dance teachers can play an important role in moderating external and individual expectations during the pubertal transition.

Keywords: qualitative, dance, teaching, puberty, adolescence, health

The role of puberty in the *making and breaking* of young ballet dancers:

Perspectives of dance teachers

Dance is a popular activity in the United Kingdom; over 5 million individuals participate annually (DanceUK, 2011; Stenton, 2011). Approximately 22 dance colleges offer professional training, ~300 university courses have dance as a subject area, and an estimated 1,000 dancers graduate every year (DanceUK, 2011). Training in dance can take place at many levels, in broad terms there are two categories: recreational and vocational (also described as full-time or pre-professional). In recreational dance the goal of participation is oriented around the enjoyment of dance as an activity. Vocational training pertains to a more serious involvement with dance whereby those who participate at this level undertake highly specialised, intensive training designed to prepare them for a professional career in the dance industry (CDET, 2011).

Differing health outcomes for individuals partaking in recreational and vocational dance highlight the importance of the context in which dance training takes place. Participation in recreational dance during adolescence is associated with greater self-esteem and more adaptive motivation i.e. motivation that promotes positive and sustainable involvement in dance (Quin, et al., 2007). Paradoxically, participation in vocational dance training has the potential to adversely impact physical and psychological health (Buckroyd, 2000). Although vocational training has the potential to foster the same health benefits as recreational training, evidence suggests that the former can also cause damage and fail to protect young people from maladaptive and perhaps destructive behaviours (Buckroyd, 2000; Schnitt, 1990; Smith, 1998; Wilson, 1994). Prevalence of injury, smoking, substance abuse and eating disorders are comparatively high among trainee and professional dancers than in

the general population (Arcelus, Witcomb, & Mitchell, 2014; Brinson, 1996; Garner, Garfinkel, Rockert, & Olmsted, 1987; Schnitt, 1990).

Studies of attrition rates in vocational dance training provide us with greater understanding of the context. Attrition rates in vocational dance training are high compared to other forms of physical activity. Attrition rates of 53% to 55% have been reported in longitudinal studies (Hamilton, Hamilton, Warren, Keller, & Molnar, 1997; Walker, Nordin-Bates, & Redding, 2012). Factors associated with dropout vary with dance style and level of performance, but evidence consistently suggests that puberty is a time period for increased risk of dropout. This interval includes major changes in body size, proportions and composition, and physiological changes associated with sexual maturation and the growth spurt (Rosenfield, 1991; Tanner, 1962). Age at pubertal onset (timing) and rate of progress through puberty (tempo) vary considerably among individuals (Malina, Bouchard, & Bar-Or, 2004).

Puberty appears to be a key event in terms of continuing vocational training as well as an inevitable challenge that young dancers will have to negotiate. It is therefore important to consider puberty within the context of vocational dance training. The most pertinent and overt pubertal changes for female dancers include increase in body mass and height, changes in limb length (proportions) and body composition (specifically fatness and fat distribution), breast development, and menarche (Sugar, 1993; Summers-Effler, 2004). How individuals adapt to these changes may be central to experiences in dance as maladaptive responses may negatively influence psychological health and well-being (Brooks-Gunn & Warren, 1985; Summers-Effler, 2004; Yuan, 2012). In vocational training full-time commitment can begin as early as 10 years of age; in boarding schools children selected at this age study dance alongside their basic schooling (Buckroyd, 2000). Subsequently, in the context of vocational dance training, the teacher and peers may assume the roles described in research as peer and

family groups (Petersen & Taylor, 1980). Variables at the level of peer and family group may include communication of positive or negative evaluations of pubertal developments and teacher/peer support. Extant literature demonstrates how peer and family perceptions of changes and reactions to them are fundamental to an individual's experience and subsequent psychological wellbeing (Summers-Effler, 2004). Therefore, within a vocational training context the dance teacher may have a key role to play in influencing an individual's interpretation of physical change and may also play a role prior to these changes in shaping social expectations of changes and the body (Petersen et al., 1980; Pickard, 2013; Tremblay & Lariviere, 2009; Yuan, 2012).

The social context in which the pubertal transition occurs influences the degree to which adolescents successfully adapt to the associated changes (Stark & Newton, 2014). While the physical changes associated with puberty in males (greater stature, strength and power) are generally welcomed in the context of dance (Buckroyd, 2000; Francisco, Alarcao, & Narciso, 2012; Pickard, 2013), the corresponding changes present more of a challenge to female dancers as many are not conducive, or are perceived as less conducive, to successful performance. Perceptions are derived from the social context, and in the case of ballet the ideals of what is healthy and desirable are largely based upon the norms and values of the ballet culture and associated demands (Benn & Walters, 2001; Pickard, 2013). The term social stimulus value describes the interaction of different forms of stimuli, in this case the adolescent body, with sociocultural or personality variables (Petersen & Taylor, 1980). For example, external morphological changes, such as an increase in weight, height or breast development, may have more immediate social stimulus value and are also likely to have a different significance to the individual and to her social network than more internal changes such as hormone levels; the social stimulus value of these changes will depend on the social context in which changes happen (Petersen et al., 1980).

Although the psychological and social aspects of puberty within a dance context have been examined (Pickard, 2013; Stark & Newton, 2014), few studies have considered interactions between biological changes and psycho-behavioural adaptations during puberty. Nevertheless, the biological aspects of puberty are perceived as having a significant role in adherence to professional ballet training among females (Brooks-Gunn & Warren, 1985; Hamilton, et al., 1997). Early age at menarche and greater breast development have been described as characteristics which differentiate dancers who dropped out from those who continued training (Hamilton, et al., 1997), while later recalled ages at menarche were associated with successful adaptation to ballet training among dancers 14-18 years (Brooks-Gunn & Warren, 1985). Nevertheless, the mechanisms and processes through which early onset of puberty and associated changes impact attrition are not fully understood.

The timing of pubertal changes may influence the extent to which an individual meets the physical and societal demands of ballet. For example, earlier maturing female dancers may experience a less supportive social context than later maturing dancers due to different expectations placed upon them. While the latter are aesthetically favoured and placed in a social context that expects high achievement, earlier maturing dancers may be less aesthetically favoured in a context of lesser expectations (Brooks-Gunn & Warren, 1985). The preceding is consistent with evidence for female artistic gymnasts among whom greater body size was associated with negative interactions with coaches; taller and heavier girls reported less encouragement, reinforcement and instruction, and more punishment and ignoring of mistakes (Cumming, Eisenmann, Smoll, Smith, & Malina, 2005).

Age at menarche is an indicator of maturity timing which occurs rather late in the pubertal transition; it occurs, on average, after age at peak height velocity (Malina, et al., 2004). Estimated median ages at menarche vary by ethnicity, as shown in a national sample of American girls: non-Hispanic White 12.6 years, Mexican American 12.3 years, non-

Hispanic Black 12.1 years (Chumlea, et al., 2003). Elite ballet dancers present, on average, later ages at menarche, though most of the data are based on recalled ages and on questionnaires (Frisch, Wyshak & Vincent, 1980; Burckhardt, Wynn, Krieg, Bagutti, & Faouzi, 2011; Hamilton, et al., 1997; Steinberg, et al., 2008). Report ages varied between 13.1 years (Steinberg et al, 2008) and 13.9 years (Burckhardt et al, 2011). An early prospective study of dancers 12-15 years at baseline reported a later age at menarche in 13 dancers, 15.4 ± 1.9 years; however, two dancers 18 years of age were still pre-menarcheal at the conclusion of the study (Warren, 1980). More recently, a mixed-longitudinal study of ballet dancers 8-11 years at baseline noted a mean age at menarche of 13.1 ± 0.9 years with a range from 11.0 to 14.9 years (Matthews, Bennell, McKay, Khan, Baxter-Jones, Mirwald & Wark, 2006). Note, however, that studies of age at menarche in youth samples are influenced by differential dropout and persistence and associated selectivity of ballet (Malina, Rogol, Cumming, Coelho e Silva & Figueiredo, 2015).

The greater proportion of later maturing girls among dancers reflects several factors, including familial (genetic and non-genetic), athletic and aesthetic advantages (more linear physique, smaller pubertal gains in absolute and relative fat mass, greater relative strength), self-selection, and systematic selection bias towards girls who possess appropriate physiques for success (Brooks-Gunn, Attie, Burrow, Rosso, & Warren, 1989; Brooks-Gunn & Warren, 1985; Hamilton, Brooks-Gunn, Warren, & Hamilton, 1988; Pickard, 2013; Steinberg, et al., 2008). Moreover, within social contexts such as ballet training where a lean physique is favourable, late maturation and the physical characteristics associated with it may hold a more positive social stimulus value for teachers and peers than the physical characteristics, such as weight gain, which are more pronounced with early maturation (Brooks-Gunn & Warren, 1985; Pickard, 2013). Similarly, Cumming and colleagues' (2005) findings suggest that body size, particularly in activities which associate body size with athletic potential, such

as gymnastics, can influence the positive or negative behaviours of coaches; thus altering the perception of the educator and their subsequent positive or negative interactions with an individual during training (Cumming, Eisenmann, Smoll, Smith, & Malina, 2005). Within the context of dance, individuals reporting early ages of menarche are more vulnerable to developing psychosocial problems (Brooks-Gunn & Warren, 1985; Hamilton, et al., 1997; Nordin-Bates, Walker, & Redding, 2011), appear to be at higher risk of disordered eating (Brooks-Gunn & Warren, 1985; Hamilton, et al., 1997; Nordin-Bates, et al., 2011) and negative body image, and to have increased weight concerns, higher psychopathology and greater perfectionism (Brooks-Gunn & Warren, 1985). Other studies reporting the prevalence of such health outcomes among ballet dancers do not consider the potential interaction between psychosocial and biological factors in the development of these outcomes (Arcelus, et al., 2014; Penniment & Egan, 2012; Zoletić & Duraković-Belko, 2009).

A more comprehensive understanding of the dancer's transition through puberty requires a biocultural approach which considers the interactions of the biological and societal demands placed upon the maturing and developing individual (Cumming, et al., 2012; Malina, et al., 2004; Petersen & Taylor, 1980). Central to the biocultural approach is the assumption that the biological changes of puberty occur in a cultural context which can both directly and indirectly affect adolescent behaviours. Whereas direct effects describe any unmediated effects of biological maturation on behaviour, such as increased strength, speed, or power, or increased interest in sexual behaviour, indirect effects refer to those which are mediated by psychological constructs such as self-perceptions and/or are moderated by exogenous factors such as social context or the perceptions of significant others (Cumming, et al., 2012). As such, the cultural context in which puberty occurs and the meanings and values ascribed to it are essential for a more complete understanding of puberty (Brooks-

Gunn & Warren, 1985; Cumming, et al., 2012; Pickard, 2013; Summers-Effler, 2004; Tremblay & Lariviere, 2009).

Evidence addressing direct and indirect effects of variation in maturity status suggests that individual perception of change and the reactions and evaluations of others are important factors in physical activity and sport (Cumming, et al., 2012; Hunter Smart, et al., 2012). The need to evaluate the influence of the ‘cultures’ or environments of specific sports on the development of youth athletes has been recommended (Malina, et al., 2013; Malina, et al., 2015). This applies equally to ballet training and requires consideration of interactions among the ‘culture’ of ballet training (moderating factors); self-perceptions, attitudes towards the body, among others (mediating factors); and the biological maturation of young dancers.

Puberty presents a challenge to female ballet aspirants as ballet has an established and widely accepted aesthetic ideal; a key player in helping dancers through the pubertal transition is the ballet teacher. How the teacher interprets and evaluates the body and the nature and quality of the reactions and interactions with their students is of significance to the young dancer (Buckroyd, 2000; Pickard, 2012, 2013, 2015). As young dancers strive to achieve technical proficiency and the “ballet aesthetic of beauty and perfection” (Pickard, 2012, p.36), they constantly look to the teacher for a particular positive response and perceive evaluation in both spoken and unspoken forms (Pickard, 2012, 2015). Nevertheless, few studies have examined the social stimulus value of pubertal changes in young dancers, the degree to which pubertal timing impacts student-teacher relationships, and teacher evaluations and expectations of ability and potential. In light of these observations the purpose of this study is to explore (1) the social stimulus value of the body in ballet as perceived by the dance teacher and (2) the views of teachers on how perceived social stimulus value may change during puberty.

Methods

Design

Interpretative phenomenological analysis (IPA) is a qualitative method which aims to develop an understanding of the meaning of human experience and how individuals make sense of their personal and social world (Smith, 1996; Smith, Flowers, & Larkin, 2009). IPA is a dynamic interpretative process which places an emphasis on the active role of the researcher with the objective to make sense of people's experiences. As the focus of the study was heavily weighted in examining perception and exploring the personal and social experiences of individuals, IPA provides an appropriate methodology. Semi-structured interviews are recommended when conducting IPA, this method enables the interviewer to elicit rich, descriptive responses with the interviewer guided by the schedule as a framework rather than dictated by it (Smith & Eatough, 2007).

Participants

Ten ballet teachers were recruited online via forums, social networking sites and local and national dance organisations. Inclusion criteria were age (≥ 18 years) and a minimum of three years of experience teaching ballet. The teachers ranged from 24 to 62 years and included nine females and one male, which was generally consistent with the ratio of women to men in the ballet profession (Buckroyd, 2000). The teachers had a wide range of dance experience: four trained vocationally and danced professionally prior to their teaching career, three trained vocationally and then pursued teaching, and three entered directly into the teaching profession. All had current or past experience teaching adolescent dancers. Teaching experience ranged from 3 to 35 years (mean = 17.5 years). All participants were currently teaching ballet, six in a recreational (amateur) setting and four at vocational (pre-professional) dance schools.

Ethical Approval

All procedures were approved by the University of Bath Research Ethics Approval Committee for Health (Guillemin & Gillam, 2004; UoB, 2014). Each of the 10 teachers provided informed consent. For the purpose of anonymity, participant's names were removed from interview transcripts and renamed P1-P10. The nature of conducting narrative based interviewing poses a risk to anonymity and confidentiality i.e. where places or names are referred to. Subsequently, any identifying information has been removed from the interview transcripts.

Procedures

Interviews were conducted in person and took place in neutral settings such as cafés. Each interview followed a format with two main sections. The first was designed to ease the participant into the subject matter and asked for general perceptions of the dance world, and the second probed personal opinions and feelings on specific topics. The focus thus shifted from perspectives of 'the dance world' to 'you', the dance teacher. The format of the semi-structured interview catered to the variation among participants and allowed for changes in sequence, omission of questions as necessary, and/or differential phrasing of questions (Smith, et al., 2009). The semi-structured format permitted the interviewer to elicit rich, descriptive responses from participants, and was guided by the schedule as a framework rather than dictated by it. At the conclusion of each interview, up to 30 minutes was allotted for the researcher to reflect and note points of potential significance which were thus available for reference during analysis. Interviews were recorded using a dictaphone and later transcribed for analysis.

Analysis

IPA is highly interpretative and detailed with the objective to make sense of individual experiences. The analysis was divided into three main phases: (1) summarising the experiences described by the participant, (2) evaluating their meaning, and (3) evaluating the

self-reflections of the 10 individuals to explore what they make of their own experiences (Lyons & Coyle, 2007). The interpretative process coupled with the identification of themes comprised the final stage of analysis: a narrative account of the interplay between the interpretative activity of the researcher and the participant's account of their experiences in their own words (Smith, et al., 2009). The stages form an audit trail to illustrate how the interpretations were made based in the data. Derivation of themes by two other researchers was used to triangulate emergent themes and to ensure the credibility and reliability of the themes identified in the data.

Results

Four themes emerged as central to the social stimulus value of the adolescent dancer's body. (1) *The ideal body* reflected the teacher's perceptions of the ideal body for ballet and their interpretation of the ballet world's perception of the ideal. (2) *Puberty as a 'make or break' factor in dance*: puberty was indicated as a pivotal, 'make or break' stage in the development of young dancers. (3) *Teacher awareness of pubertal onset and the implications of timing*: teachers noted their awareness of pubertal timing and the physical and behavioural cues which they perceived as important. (4) *Teacher approaches to managing puberty in the dance environment*: teachers demonstrated mixed approaches in terms of how they negotiated pubertal changes and challenges within the dance studio. Each theme is subsequently discussed; selected quotations of participants are presented in Tables 1 to 4.

The ideal body (Table 1)

Teachers agreed that possessing an ideal body was very important for achieving a career in ballet. Many perceived the ideal body as an enduring requisite for ballet that was rooted in the functional demands of the activity and cultural expectations of the ballet world. Descriptions of the ideal body were highly consistent among teachers: 'slim' (P1-7, P10),

‘long limbed’ (P1, P3 - 7, P9 -10) and ‘athletic’ (P2, P6, P10), with ‘long musculature’ (P1, P5, P7), ‘long neck’ (P7, P10) and the ‘right proportions’ (‘small frame’, ‘narrow shoulders’, ‘short body’, ‘long legs’) (P1 - 5, P9). Cultural differences in what constituted the ideal body and secular changes were also noted by several teachers.

Puberty as a ‘make or break’ factor in dance (Table 2)

Puberty was viewed by teachers as a pivotal, ‘make or break’ stage of the development for young dancers (P1 - 3, P6 - 7, P9 -10). Teachers described puberty in negative terms such as ‘unavoidable’ and ‘inconvenient’. It was also described as “...very inconvenient but inevitable sadly” (P9), and its associated outcomes as unpredictable: “...to help guide a student is a bit like Russian roulette you don’t want to jump the gun on it but by the time they’ve gone through it you have a good idea about shape or size or height” (P9). Teachers also expressed apprehension about decisions regarding selection out of programmes at this stage and about puberty clouding understanding of ability and potential: “I don’t think you can make any huge decisions quickly... I think you have to talk to them realistically and say look, at the moment this is a problem. We need to see if things settle; if they don’t, yeah we may need to think about an alternative pathway. But what if they do go back and you’ve assessed someone out? Nobody’s got a crystal ball” (P6). Teachers referred to a cultural desire from the ballet world for young dancers to remain pre-pubertal with some directors and choreographers quoted as using the term ‘girls’ and ‘boys’ to refer to and address adult dancers. Teachers also suggested that certain physical and psychological changes may not be conducive to a career in ballet and that this may necessitate alternative career paths or an exit from elite dance training. Pain and injury associated with functional/physical changes during puberty were also noted as obstacles to a dance career.

Teacher awareness of pubertal onset and the implications of timing (Table 3)

Teachers described their awareness of pubertal onset and timing and the physical and behavioural cues which they perceive (Table 3). However, perception of differential timing and associated advantages and disadvantages varied greatly among teachers. Beliefs related to perceived advantages and disadvantages associated with variation in pubertal timing (early, on time, late) within the context of ballet were very mixed with no clear consensus as to whether early or late maturation was preferable.

Teacher approaches to managing puberty in the dance environment (Table 4)

Teachers demonstrated mixed approaches to addressing changes and challenges of puberty within the dance studio (Table 4). Three main approaches were classified as direct, indirect and passive. A direct approach involved the teacher engaging in relatively open strategies such as adapting training in response to rapid pubertal changes, communicating with students about adjusting aspirations for a career in dance, and educating students about the changes. Indirect approaches were less formal and involved more subtle strategies to help students adapt to and cope with the changes of puberty. Examples of strategies included the deliberate avoidance of career decisions at this time, addressing puberty privately/individually, and modifying the learning/training environment such as the removal or covering up of mirrors. Teachers applying a more passive or hands off approach believed that the best way to help students to negotiate pubertal changes was to ‘not make a big deal of it’ and to limit their interactions with the changes to the acknowledgment of growth spurts.

Discussion

A slender, linear body holds high physical capital in the ballet world (Bronhorst, et al., 2001; Brooks-Gunn & Warren, 1985; Buckroyd, 2000; Copeland & Jones, 2014; Foster, 2003; Green, 1999; Kirkland & Lawrence, 1986; Pickard, 2013, 2015; Vincent, 1981; Wainwright, 2004). As hypothesised, dance teachers highly valued slimness, but it was also

evident that teachers equally valued other attributes such as strength and health. While the dance teachers placed emphasis on a healthier body and less narrow aesthetic along with other qualities such as passion and talent, they were still bound by the wider ballet world's narrower, more extreme aesthetic. This was explicit in suggestions that failure to meet the requirements of body size and shape reduced the individual's chances to enter or continue into the ballet profession. The teachers were to some extent somewhat conflicted; they valued attributes other than slimness, but were highly aware that less 'ideal' bodies would not be accepted in the elite, professional context. The result was thus consistent with the literature; accordingly, "...if a body does not fit with the expectations of slim in size and shape then, they will not fit the expectations of ballet and will not be able to call themselves or claim identity as a ballet dancer" (Pickard, 2013, p. 16). Thus, although teachers valued and encouraged a less extreme aesthetic, they were restricted by the need to conform to the expectations and values of the wider ballet world.

The notion of puberty as a threat to achieving the goal of becoming a ballet dancer (Pickard, 2013) was also noted in the general consensus among teachers that puberty was a 'make or break' event in determining suitability for ballet. Maintenance of slimness and a linear physique throughout puberty were desirable, whereas broadening of the hips, breast development and increased fat mass were not desirable. While these parameters were not always specified in descriptions of the ideal body, they were perpetuated through a perceived need to conform to the wider demands of the ballet world. Although lack of the necessary physical attributes was not in itself believed to prohibit a career in other dance modalities, a slender and linear physique were considered essential requirements for those wishing to pursue a career in ballet. In negotiating this conflict, teachers thus have the potential to moderate both the aspirations of a young dancer and the external expectations of the wider ballet world.

The dancer's perception of body ideals within their immediate social context stems largely from the teacher (Pickard, 2013). This notion was clear in the comments of the teachers who were in a position to influence a young dancer's perceptions of pubertal changes and also had the potential to moderate expectations regarding the body and its value in the ballet training environment. The findings were generally consistent with the contextual amplification hypothesis (Ge, Brody, Conger, Simmons, & Murry, 2002) in which any detrimental effects associated with early maturation were less likely to be realised in supportive and more adaptive learning environments. Although the evidence suggests potential for such effects in ballet, further research is needed to substantiate the hypothesis.

Puberty generally coincides with a stage in ballet (~14-16 years) during which important decisions are made pertaining to career pathways and opportunities for continued education and support. Teacher comments on the impact of body size and shape on selection and socialisation among young dancers provide valuable insights. In the opinion of most teachers, dancers for whom puberty was less 'conducive' to ballet were more likely to be discouraged from pursuing a professional career. This pattern of exclusion was most evident in vocational schools where such individuals were commonly 'assessed out' (cut out) of programs as part of a formal selection strategy. The observation highlights the increased social stimulus value of body size and shape in ballet at puberty. Although teachers understood why such practices existed and generally conformed to them, several believed that such decisions occurred too early in the career pathway and resulted in the potential exclusion of earlier maturing talented dancers.

Increased emphasis on body size and shape during puberty begs the issue of genetic potential for ballet. "Genetic potential" is a widely used but complex concept; height (size attained and rate of growth), physique, puberty (timing and tempo), and physical performances are multifactorial phenotypes that can be observed. However, the specific

genes which influence these phenotypes and their interactions with the pre- and post-natal environments of the individual remain to be elucidated. Responsiveness to specific training protocols is an additional factor which is in part genotypically mediated (Bouchard, Malina, & Pérusse, 1997; Malina, et al., 2004).

The ideal body for ballet - a body that is slim, has the right proportions, long limbs, and is muscular and flexible - is generally pervasive throughout the ballet world, but does vary somewhat across culture and history (Jackson, 2005; Pickard, 2013). Notions of desirable and undesirable physical development are also clear in that wide hips and large breasts hold much less value in the ballet world, where maintenance of a more pre-pubertal physique holds higher value and is thus more desirable.

The timing of puberty (i.e. early, on-time or late) and associated advantages and disadvantages were implicit in the comments of the teachers. Teacher comments were generally consistent with earlier observations describing a ‘goodness of fit’ between the demands of the ballet culture and the physique associated with later maturation (Brooks-Gunn & Warren, 1985). Views of the teachers, however, were somewhat mixed on whether early or late maturation was most advantageous for young dancers. Teachers advocating the advantages of late maturation (P3, P4) focused on aesthetic and functional attributes, while those advocating for early maturation (P6, P7, P9) argued that dancers who matured in advance of peers had more opportunity to adapt to the physical and functional changes associated with puberty and were less susceptible to injury which afforded a significant advantage during increases in training load and emphasis on testing/evaluation at this time (~14-16 years). The comments diverged from the general consensus that ballet favoured girls who were later in maturation, and suggested potential benefits of earlier maturation which have not been systematically explored in the ballet literature. The comments also emphasised that late maturation in itself was not necessarily an advantage in ballet as the period of most

rapid growth may then coincide with increases in training load and intensity. Of note, a few teachers (P8, P10) viewed the timing of maturation as irrelevant to ballet, the main reason given for this was that the students are all individuals with the idea that if you are teaching all your students as individuals their differing levels of maturity can be irrelevant. In addition both participants admitted to a lack of understanding in terms of the timing of maturation suggesting a need for further research and perhaps also education on the issue.

Practical Implications

Although limited to the views of ten teachers, the observations provide insights into how dance teachers interact with and manage the adolescent dancer. They also highlight the importance of educating ballet teachers on the details of and normal variability in adolescent growth and biological maturation, and the potential for teachers to play an active role in ensuring the psychological health and well-being of adolescent dancers.

All ten of the teachers generally perceived puberty as a negative event and as something which had a detrimental impact on factors such as physique, self-confidence and functional capacity. A limited number of teachers (P9, P10) also identified positive aspects of puberty and these were typically related to emotional and cognitive maturity such as “...she dances like a young woman and she has the maturity and the work ethic to deal with those physical changes and she’s adapting to them really well” (P10, p.5) and “a very emotionally mature student...she’s 11 but she performs like she’s a 17 year old like she’s feeling everything very deeply and she’s just breath-taking to watch on stage as a result” (P9, p.4).

Beliefs of the teachers about puberty and associated effects of pubertal timing, however, were not always accurate, for example “well late is probably not great cause sometimes that’s linked up with size” (P2, p.3). There is a need to educate ballet teachers on the biological and behavioural changes that characterise puberty in general and with an emphasis on the potential benefits to development as a dancer. Better understanding of

puberty per se and details of progress through puberty may encourage teachers to perceive the changes in a more positive light and help to reduce negative perceptions for development in ballet.

Perhaps of most practical relevance were the findings pertaining to how dance teachers approach and manage puberty. Teachers used a blend of direct and indirect strategies to mitigate potentially harmful effects of puberty (the potential for the development of less healthy self-perceptions) on the psychological development of dancers. The ability of teachers to moderate the effects of puberty on psychological wellbeing has important practical implications. Awareness of external expectations and individual aspirations and of strategies to make the pubertal transition less stressful for dancers has the potential to result in learning environments that are more supportive and protective of physical and psychological health. Examples of teacher actions to moderate the effects of puberty include indirect approaches such as covering up mirrors to focus attention away from the body and direct approaches such as discussing changes openly with students or tactfully suggesting they audition for other schools or focus on other dance styles. Although many teachers described the preceding as a major part of their role, others preferred a more passive role. More passive approaches involved not acknowledging any pubertal changes other than growth spurts and waiting for rejection at auditions to signal to the student that they may not continue in ballet. Accordingly, further research into how teachers can be encouraged to better understand puberty and to create and recognise the need for more adaptive and healthy environments is recommended in order to address what may be a gap in current teacher training initiatives.

The observation that girls delayed in maturation were more likely to experience marked increases in training load and physical testing during the period of most rapid changes in growth warrants further discussion. Undergoing pubertal changes during the

interval of intensive evaluation of dance potential may serve as a disadvantage in the selection process and may also be a significant risk factor for injury (Bowerman, Whatman, Harris, Bradshaw, & Karin, 2014; Bowerman, Whatman, Harris, & Bradshaw, 2015). The preceding highlights the need to consider individual differences in maturation when assessing dancers, prescribing training programs and providing psychosocial support. In an attempt to optimise dance development and minimise the likelihood of injury, teachers and schools might consider tailoring programmes to individual dancers by considering the stage of biological and perhaps behavioural development. The process of bio-banding (i.e., grouping athletes relative to physical size) has been applied in a number of team sports in order to create more developmentally appropriate competition and training structures. While physical size may be of limited relevance in ballet, dancers could be grouped relative to their maturational status. In doing so, early maturing girls would not be delayed in their progress, whereas later maturing girls would be assessed and experience increases in training loads at a time point when it was most developmentally appropriate.

Limitations

The study is limited to ten volunteers, therefore potential for bias is a concern. Nevertheless, the sample spanned a broad range of age, experience, years of teaching and current teaching settings. As such, the sample provided a fairly realistic representation of dance teacher practice. In addition, the observations were based on self-report which may not necessarily reflect actual teaching practices. A mixed methods study involving both self-report and observation, and quantitative and qualitative methods would provide a more comprehensive view of ballet teaching per se and help to substantiate findings regarding adaptive and maladaptive teaching styles.

Conclusion

Ballet teachers consider puberty to be a critical '*make or break*' event in determining the future prospects of young dancers. The physical changes associated with puberty and their associated social stimulus value as perceived by teachers and the wider ballet world conflict with the functional and aesthetic requirements for a career in ballet. The views of teachers also highlight their potential to play a role in moderating external expectations and individual aspirations in ballet. Further research is needed to apply this understanding to the dance classroom in order to create healthier training environments which are protective of psychological health and wellbeing. By inference, the improvement of teacher awareness of the biological and behavioural dimensions of puberty, a normal biological milestone, can serve to reduce perceptions of puberty as a negative event for development of young ballet dancers.

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Table 1. The Ideal Body

Sub theme	Qualitative evidence
Functional demands	<p><i>...there are young women who develop in a way where their bodies are suited to ballet technique and ballet training I think in that sense there is an anatomical ideal where the mechanics simply work that way (P10)</i></p> <p><i>...you have to have a certain ratio with the shoulders, the ribs and the hips particularly in terms of leg length because pas de deux is inevitable you have to be able to facilitate that (P9).</i></p>
Cultural expectations	<p><i>I do want my ballet dancers to look slim fitting but I don't I am uncomfortable with overly slim (P6)</i></p> <p><i>the establishment has a very very narrow look on what a classical body should be and I think especially with younger dancers who are in more of a classical environment they kind of know that if they want to go anywhere they have to have that kind of body (P5)</i></p> <p><i>...let me just give you an instance that I say to all the students actually but mainly to the girls I say to them 'You're like a packet of biscuits...if I go into a supermarket and I've got two packets of custard creams, one's got the Tesco's white and blue wrapping and one's got fancy wrapping and they're both the same price, which one am I gonna go for?' And I say 'that's what you've got to remember, you are a packet of biscuits because when you go out there people judge how you look' (P5)</i></p>
Secular change	<p><i>ballet in particular seems to have become more extreme certainly over the last 35 years since I was a dancer. When I was a dancer there was pretty much any shape and size imaginable and if they could dance then that was enough these days I don't believe that that is enough anymore, I think it's very sad (P6)</i></p> <p><i>the whole romantic period focussed on the idea of the woman as an ethereal, mystical creature that was almost like weightless and possibly that's where it came from although again the dancers in those days were probably bigger than they are nowadays so but I think that's sort of initially where it came from (P4)</i></p>
Cultural differences	<p><i>in the UK and perhaps Europe we prescribe to a ballet body which is very slim athletic but then if you go across the pond a little bit to America there's a much more muscular stature that they promote for their dancers much more I guess athletic is the best word perhaps slightly more masculine in build actually a little bit more of that kind of obvious muscle tone but there's definitely a side to the American market that likes strong very visibly strong ballet dancers (P10)</i></p>

Table 2. Puberty as a ‘make or break’ factor in dance

Sub theme	Qualitative evidence
Physical change	<p><i>you can look and you can probably go I think your shoulders are a bit broad or your hips are a bit wide or you’re quite young and you’ve already got a chest so maybe that’s not, you know, gonna go in your favour (P10)</i></p> <p><i>I think through puberty girls go through a lot of different changes which do include, as I said, gaining weight, curves in the places that the dance world doesn’t want curves (P1)</i></p> <p><i>students that I’ve come across that have actually gone on to do anything have generally stayed quite small well obviously if they’ve gone into ballet (P2).</i></p>
Psychological change	<p><i>I think it impacts if they’ve gone through puberty early and they’re very self-conscious because I think if you have a self-conscious performer then I think it hinders their progress when they’re going to you know decide whether they’re going to take performing seriously (P3)</i></p> <p><i>...you don’t really have control over that [physical changes] and unfortunately if you did have somebody like that that then went okay how am I gonna control that that’s kind of how anorexia can where it can stem from which kids are very aware of depending on their environment in vocational training in particular it’s that’s where it can stem from because they try and stop the puberty from happening (P7)</i></p>
Career paths	<p><i>I try and be realistic because if they’re going to audition they’re going to have to pay money to audition and if you just know somewhere is not going to look at them because of the size they are then you can maybe tactfully suggest they maybe audition elsewhere because they’re not going to get in why put them through it? (P2)</i></p>
Pain, injury, risk	<p><i>...a lot of the children particularly my 12’s and up have got one leg longer than the other and they’re finding serious issues they’re finding back pain, hip pain, they’re really struggling to stretch on one leg to balance on the other they’ve lost a lot of the muscle strength (P9)</i></p> <p><i>...the minute you hit that growth spurt and you lose it [flexibility] and then you have to fight for it back again you’re opened up to injury so the more that the flexibility thing happens early the more they’re likely to expose themselves to injury and then during that growth spurt they are gonna find that they have made that choice they’ve pushed themselves too far and they’re probably not going to be able to bounce back again and not in a professional elite way (P9)</i></p>

Table 3. Teacher awareness of pubertal onset and the implications of timing

Sub theme	Qualitative evidence
Physical signs	<i>...puberty does kick in and it can radically alter first of all usually you notice it's the technique first of all they lose their jump, they lose their extensions then the body you know the breasts kick in the posture goes to pot (P6)</i>
Psychological signs	<i>...very aware of the emotions because sometimes they just snap in the middle of a class go off in a fiery kind of off to the toilets and crying and that sort of thing that tends to happen so yes you do have to be ready for it (P2)</i>
Impact of timing	<p><i>Obviously late as it can give them a nicer look for if they go off for auditioning and things like that and they're a lot smaller (P4)</i></p> <p><i>earlier is more desirable before the real load you know in terms of point work and really high impact work starts to kick in (P6)</i></p> <p><i>early because you get all the growing and that through and by the time you get to 16, 17, 18 which are to me the really really really important training years you're not having to deal with all of that as much you're possibly coming out the other side of it (P7)</i></p> <p><i>it can be irrelevant they're individuals and they'll do it as and when they're ready and some do it earlier some do it later and that's fine, it's irrelevant (P8)</i></p>

Table 4. Teacher approaches to managing puberty in the dance environment

Sub theme	Qualitative evidence
Direct approach	<p><i>...so we sat down and we had a long chat... and I said look because of your body shape it will be difficult for you to get work in certain areas I think you have to face that, I'm not saying you can't but I think that will be difficult for you but you have a lot of skills in dance and if this is your passion and this is what you want to do stick with it, I think she's choreographing now actually, she had great choreographic skills, so the message was don't be beaten by it there are opportunities for you out there (P3)</i></p> <p><i>...if you just know somewhere is not going to look at them because of the size they are then you can maybe tactfully suggest they maybe audition elsewhere because they're not going to get in why put them through it (P2).</i></p>
Indirect approach	<p><i>...if I have a pupil who's really really physically self-conscious I know that I have occasionally we have curtains that cover our mirrors, I have occasionally covered the mirrors up or turned the room around so that they're not just looking at themselves, so they're not obsessing about what they look like (P3)</i></p> <p><i>I don't allow them to focus too much on how they look it's more about how things feel as long as they find a muscle, they feel a muscle they</i></p>
Passive approach	<p><i>I don't even acknowledge it or think about it unless I have to I mean obviously growth spurts if a student has grown an awful lot then we kind of chat about it... I think the dance teacher has a very difficult role in that you're not their best friend you're not their mother and it depends I think some teachers keep a barrier barrier's the wrong word but they keep that formalised relationship other teachers don't I think it depends on how you work with your students and that's up to each individual I definitely am not best friends with my students and never have been therefore I don't really think unless they came to me with it I wouldn't discuss it other than a growth spurt or something like that (P8)</i></p> <p><i>approach it from that way (P9)</i></p> <p><i>I'm not their mother I'm not their friend I'm there to do a job and that's it so it depends on the relationship that you establish and how you perceive yourself as a teacher and where you see your role in their life (P8)</i></p>